Surround Cinema Series

Models: SCS150SI
SCS160SI
SCS180.6S

Home Theater Speaker Systems

SERVICE MANUAL

JBL Consumer Products
250 Crossways Park Dr.
Woodbury, New York 11797

Rev4 10/2005

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SCS150SI/SCS160SI/SCS180.6S Systems

Frequency Response 30Hz – 20kHz (–6dB)

Satellites

Recommended Power
10 – 100 watts
Impedance
8 ohms nominal
Sensitivity
88dB @ 1 watt/1 meter
Tweeter
One 1/2" (13mm) titanium laminate dome, video-shielded
Midrange
Dual 3" (75mm) drivers, video-shielded
Dimensions (H x W x D)
8-1/8" x 3-1/2" x 3-7/8"
(206mm x 89mm x 99mm)
Weight
2.65lb/1.2kg

Center

Recommended Power
10 – 100 watts
Impedance
8 ohms nominal
Sensitivity
88dB @ 1 watt/1 meter
Tweeter
One 1/2" (13mm) titanium laminate dome, video-shielded
Midrange
Dual 3" (75mm) drivers, video-shielded
Dimensions (H x W x D)
3-1/2" x 8-1/8" x 3-7/8"
(89mm x 206mm x 99mm)
Weight
2.65lb/1.2kg

Subwoofer

Amplifier
150 watts RMS
Woofer
10" (254mm) woofer, bass-reflex enclosure
Dimensions (H x W x D)
17-3/4" x 15-3/4" x 16-3/4"
(451mm x 400mm x 426mm)
Weight
35 lb/15.9kg

Occasional refinements may be made to existing products without notice but will always meet or exceed original specifications unless otherwise stated

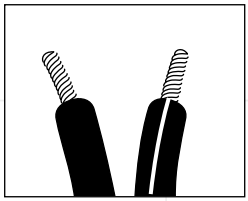
150W Powered Sub/ Plate Amp

LINE VOLTAGE	Yes/No	Hi/Lo Line	Unit	Notes	
US 120vac/60Hz	Yes	108-132	Vrms	Normal Operation	
Asia 100vac/50Hz	Yes	90-110	Vrms	Normal Operation	

Parameter	Specification	Unit	QA Test Limits	Conditions	Notes
Amp Section					
Type (Class AB, D, other)	D	D	n/a		
Load Impedance (speaker)	4	Ohms	n/a	Nominal	
Rated Output Power	150	Watts	145	1 input driven	
THD@ Rated Power	0.08	%	1	22k filter	
THD @ 1 Watt	0.1	%	0.5	22k filter	
DC Offset	10	mV-DC	20	@ Speaker Outputs	
Damping factor	>100	DF	30		Measured at speaker terminals, Output power 140 Watts THD 0.1 %
Input Sensitivity					
Input Frequency	50	Hz	50	Nominal Freq.	1 input driven
Line Input (L&R)	250	mVrms	±2dB	To Rated Power	1 input driven
LFE Input	145	mVrms	±2dB	To Rated Power	LFE input driven only
Speaker/Hi Level Input	2	Vrms	±2dB	To Rated Power	(-20 dB below Line In)...1 input driven
Signal to Noise					
SNR-A-Weighted	100	dBA	85	rel. to rated power	A-Weighting filter
SNR-unweighted	90	dBr	80	rel. to rated power	22k filter
SNR @ 1W-unweighted	60	dBr	55	rel. to 1W Output	22k filter
Residual Noise Floor	1	mVrms	2	Volume @max, using RMS reading DMM/VOM (or A/P)	
Residual Noise Floor	1	mVrms(max)	2	Volume @max, w/ A/P Swept Bandpass Measurement (Line freq.+ harmonics)	
Input Impedance					
Line input L&R , LFE	>15	K ohms	n/a	Nominal	
Speaker/Hi Level Input	4.7	K ohms	n/a	Nominal	
Filters					
Left & Right Low Pass fixed	Hz	--	±2dB		
Slope & Q	4th	dB/Octave	n/a		
LFE Low Pass fixed	Hz	--	±2dB		
Slope & Q	2nd	dB/Octave	n/a		
Subsonic filter (HPF)	Hz	--	±2dB		
Slope & Q	2nd	dB/Octave	n/a		
Limiter	YES	--	n/a		
Features					
LFE Input	YES		functional		BW Limited to 500 Hz
Volume pot Taper (lin/log)	log	--	functional		
ATO	YES		functional		
Signal Sensing (ATO)					
ATO test Frequency	50	Hz	functional		
ATO Line Level	2	mV	functional	2mV@50Hz into Line Input w/ 1 ch. driven	
ATO Speaker level input	50	mV	fucntional	50mV@50Hz into Line Input w/ 1 ch. driven	
ATO Turn-on time	5	ms	functional	Amp connected and AC on, then input signal applied	
Auto Mute/ Turn-OFF Time	15	minutes	functional	T before muting, after signal is removed	Auto turn of time (T) must be 10 > T <15
Power on Delay time	3	sec.	functional	AC Power Applied	
Transients/Pops					
ATO Transient	5	mV-peak	10	@ Speaker Outputs	
Turn-on Transient	50	mV-peak	100	@ Speaker Outputs	AC Line cycled from OFF to ON
Turn-off Transient	50	mV-peak	100	@ Speaker Outputs	AC Line cycled from ON to OFF
Efficiency					
Stand-by Input Power	14	Watts	16	@ nom. line voltage	Maximum allowable input power under nominal Input voltage and frequency, HOT or COLD operation.
Power Cons.@rated power	230	Watts	250	@ nom. line voltage	140 Watts @ 4 Ohms nominal line voltage
Protection					
Short Circuit Protection	YES	--	functional	Direct short at output	
Thermal Protection	65 deg. C	--	functional	@1/8 max unclipped Power	Temperature rise should not exceed 35K rise
DC Offset Protection	YES	--	functional	DC present at Speaker Out leads	Relay or crowbar (for driver/fire protection)
Line Fuse Rating					
US Version	3.15	Amps		Type-T or Slo Blo	External fuse with UL/SEMKO rated holder

SPEAKER CONNECTIONS

Connection Tips



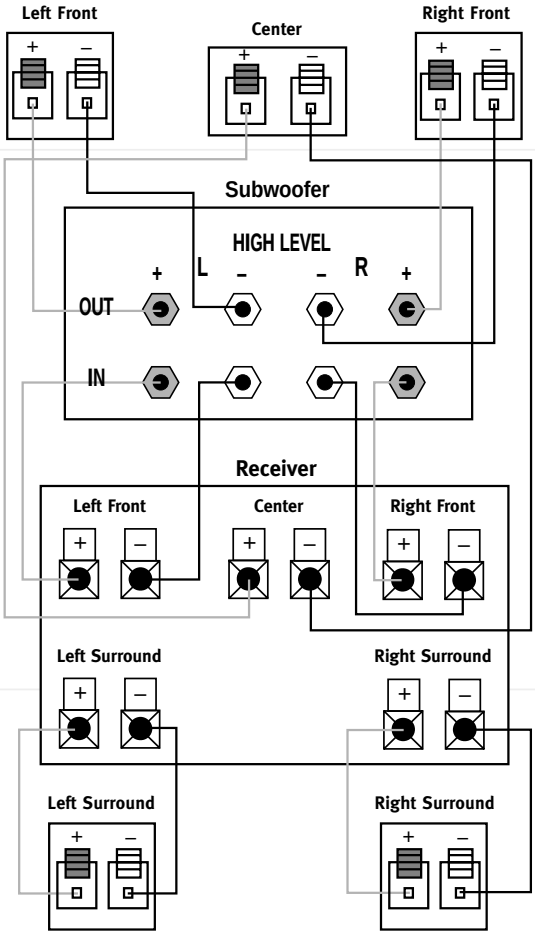
To use the binding-post speaker terminals on the subwoofer, unscrew the colored collar until the pass through hole in the center post is visible under the collar. Insert the bare end of the wire through this hole; then screw the collar down until the connection is tight. The hole in the center of each collar is intended for use with banana-type connectors.

Dolby* Pro Logic* (Non-Digital) – Speaker Level

Use this installation method for Dolby Pro Logic applications (not Dolby Digital, DTS® or other digital processing), where the receiver/processor does not have a subwoofer output, or a volume-controlled preamp (line-) level output:

Connect your receiver or amplifier's front left and right speaker terminals to the left and right terminals on the subwoofer that are marked "High Level In." Connect the left and right terminals on the subwoofer that are marked "High Level Out" to the corresponding terminals on the back of your front left and right speakers.

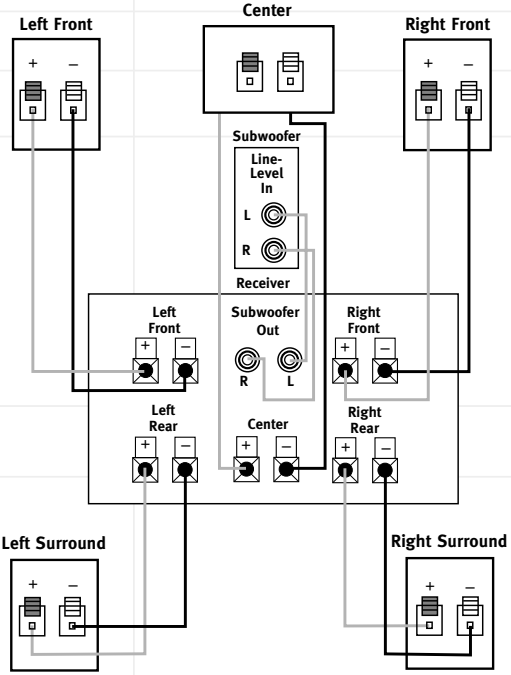
Connect your receiver or amplifier's center, left and right surround-speaker terminals to the corresponding terminals on the back of your center, left and right surround speakers.



Dolby Pro Logic (Non-Digital) – Line Level

Use this installation method for Dolby Pro Logic applications (not Dolby Digital, DTS or other digital processing), where the receiver/processor is equipped with a subwoofer output, or a volume-controlled preamp (line-) level output:

Use RCA-type patch cords to connect the line-level subwoofer outputs on your receiver or amplifier to the line-level inputs on the subwoofer. IMPORTANT: Do not use the LFE input on the subwoofer with Dolby Pro Logic processors. Note: If your receiver or amplifier only has one subwoofer output jack, then you will need to use a Y-connector (not included). Plug the male end of the Y-connector into your receiver or amplifier's subwoofer output jack, and connect each of the two female ends to separate RCA-type patch cords. Finally, plug the RCA-type patch cords into the line-level inputs on the subwoofer.

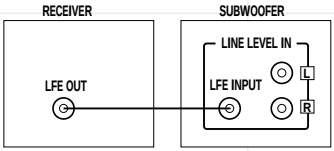


Connect each speaker to the corresponding speaker terminals on your receiver or amplifier.

Make sure your receiver or processor is correctly configured to indicate that the subwoofer is "On."

Note for advanced users: If your receiver/processor has a built-in low-pass crossover filter for the subwoofer output, you may use the LFE input to bypass the subwoofer's internal crossover.

Dolby Digital or DTS (or Other Digital Surround Mode) Connection



Use this installation method for Dolby Digital, DTS or other digital surround processors:

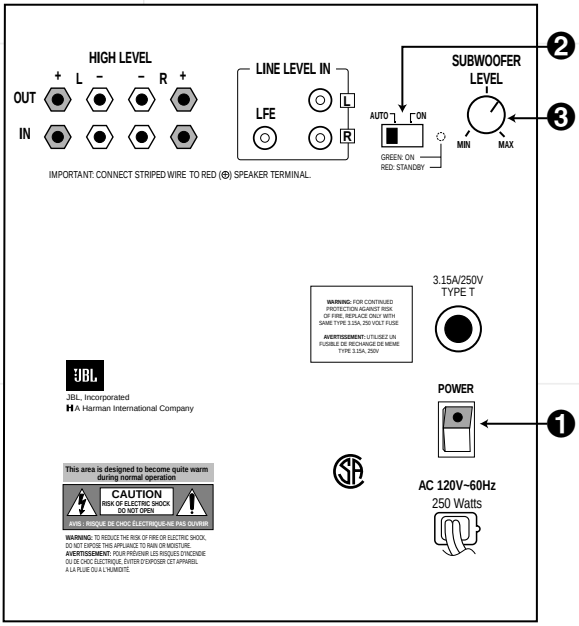
Use the line-level input jack marked "LFE" for the Low-Frequency Effects channel. Connect this jack to the LFE output or subwoofer output on your receiver or amplifier. Connect each speaker to the corresponding speaker terminals on your receiver or amplifier.

Make sure that you have configured your surround-sound processor for "Subwoofer On." The front left, front right, center and rear speakers should all be set to "Small."

OPERATION

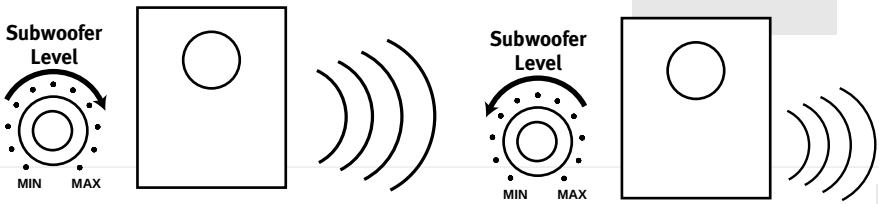
Move the Master Power switch (marked "Power" ❶) to the "•" (On) position to use the subwoofer. The subwoofer will automatically turn itself on or go into standby (sleep) mode when left in the standby mode ("Auto/On" switch ❷ in the "Auto" position). When your receiver or amplifier is off, or is not sending program material to the subwoofer, the subwoofer will be in standby mode. When the subwoofer senses an audio signal, it will automatically turn itself on. If the subwoofer does not sense a signal after approximately twenty minutes, it will automatically go into standby mode.

When the "Auto/On" switch ❷ is switched to the "On" position, the subwoofer will remain on, whether or not program material is playing. If you will be away from home for an extended period of time, or if the subwoofer will not be used, switch the Master Power switch ❶ to the Off position.


HIGH LEVEL
+ L − − R +
OUT
IN
LINE LEVEL IN
LFE
L
R
AUTO
ON
SUBWOOFER LEVEL
MIN
MAX
GREEN: ON
RED: STANDBY
IMPORTANT: CONNECT STRIPED WIRE TO RED (⊕) SPEAKER TERMINAL.
WARNING: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 3.15A, 250 VOLT FUSE
AVERTISSEMENT: UTILISEZ UN FUSIBLE DE RECHANGE DE MEME TYPE 3.15A, 250V
3.15A/250V TYPE T
JBL, Incorporated
A Harman International Company
POWER
This area is designed to become quite warm during normal operation
CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN
AVIS : RISQUE DE CHOC ELECTRIQUE-NE PAS OUVRIR
WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
AVERTISSEMENT: POUR PREVENIR LES RISQUES D'INCENDIE OU DE CHOC ELECTRIQUE, EVITER D'EXPOSER CET APPAREIL A LA PLUIE OU A L'HUMIDITE.
AC 120V~60Hz
250 Watts
❷
❸
❶

Volume

Volume can be adjusted using the Subwoofer Level Control ❸ (above), as shown below.



TROUBLESHOOTING

If there is no sound from any of the speakers:
• Check that receiver/amplifier is on and a source is playing.
• Check that the powered subwoofer is plugged in, and its Power switch ❶ is switched on to the "•" position.
• Check all wires and connections between receiver/amplifier and speakers. Make sure all wires are connected. Make sure none of the speaker wires are frayed, cut or punctured.
• Review proper operation of your receiver/amplifier.

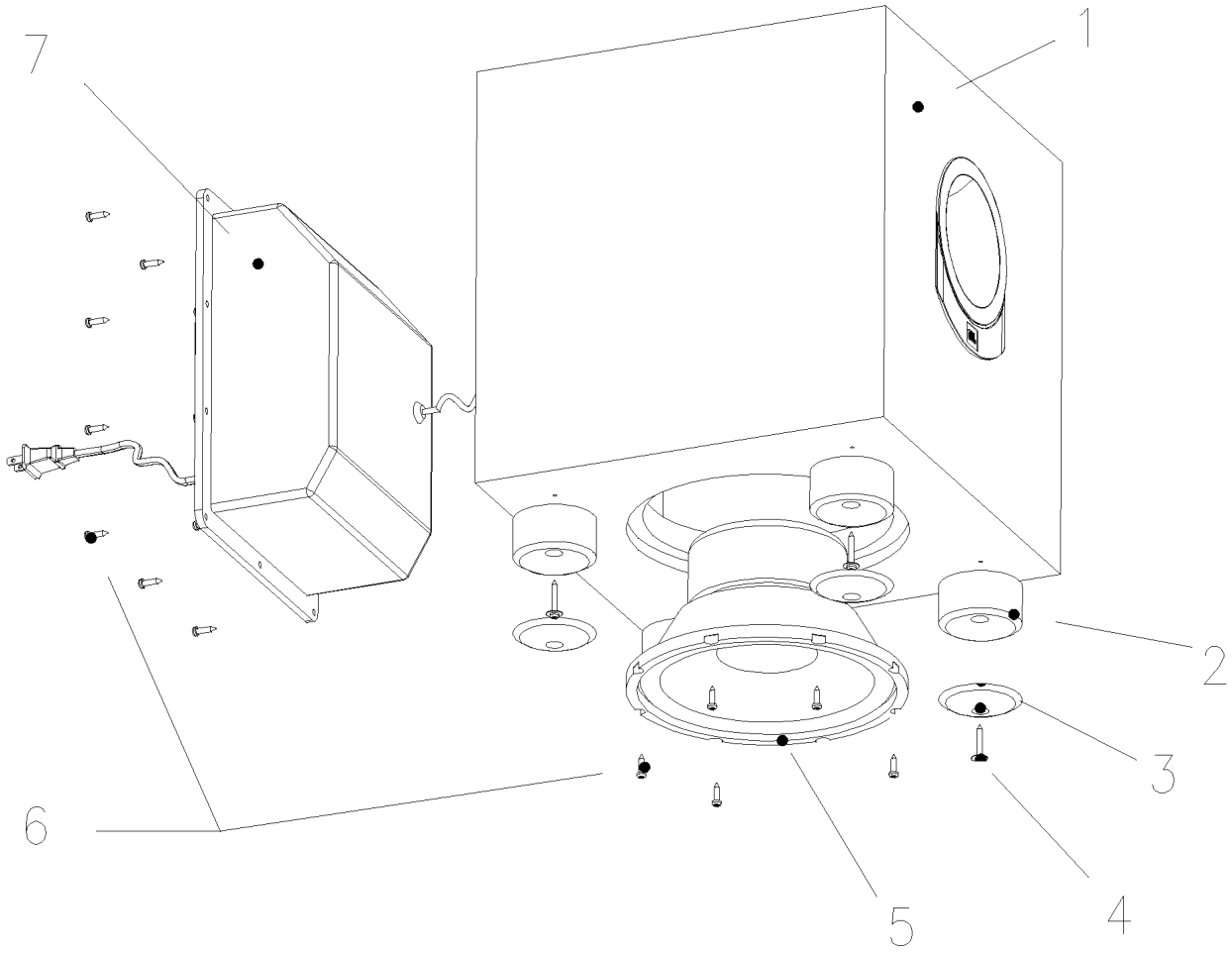
If there is no sound coming from one speaker:
• Check the "Balance" control on your receiver/amplifier.
• Check all wires and connections between receiver/amplifier and speakers. Make sure all wires are connected. Make sure none of the speaker wires are frayed, cut or punctured.
• In Dolby Digital or DTS modes, make sure that the receiver/processor is configured so that the speaker in question is enabled.
• Turn off all electronics and switch the speaker in question with one of the other speakers that is working correctly. Turn everything back on, and determine whether the problem is in the same place, i.e., the speaker that was working previously now has no sound and the speaker that was not working now sounds fine; or whether it has moved, i.e., the speaker that was not working still has no sound and the speaker that was working is still fine. If the problem is in the same place, the source of the problem is most likely with your receiver or amplifier, and you should consult the owner's manual for that product for further information. If the problem has followed the speaker, consult your dealer for further assistance or, if that is not possible, visit our Web site at www.jbl.com for further information.

If there is no sound from the center speaker:
• Check all wires and connections between receiver/amplifier and speaker. Make sure all wires are connected. Make sure none of the speaker wires are frayed, cut or punctured.
• If your receiver/processor is set in Dolby Pro Logic mode, make sure the center speaker is not in phantom mode.
• If your receiver/processor is set in Dolby Digital or DTS mode, make sure the receiver/processor is configured so that the center speaker is enabled.

If the system plays at low volumes but shuts off as volume is increased:
• Check all wires and connections between receiver/amplifier and speakers. Make sure all wires are connected. Make sure none of the speaker wires are frayed, cut or punctured.
• If more than one pair of main speakers is being used, check the minimum impedance requirements of your receiver/amplifier.

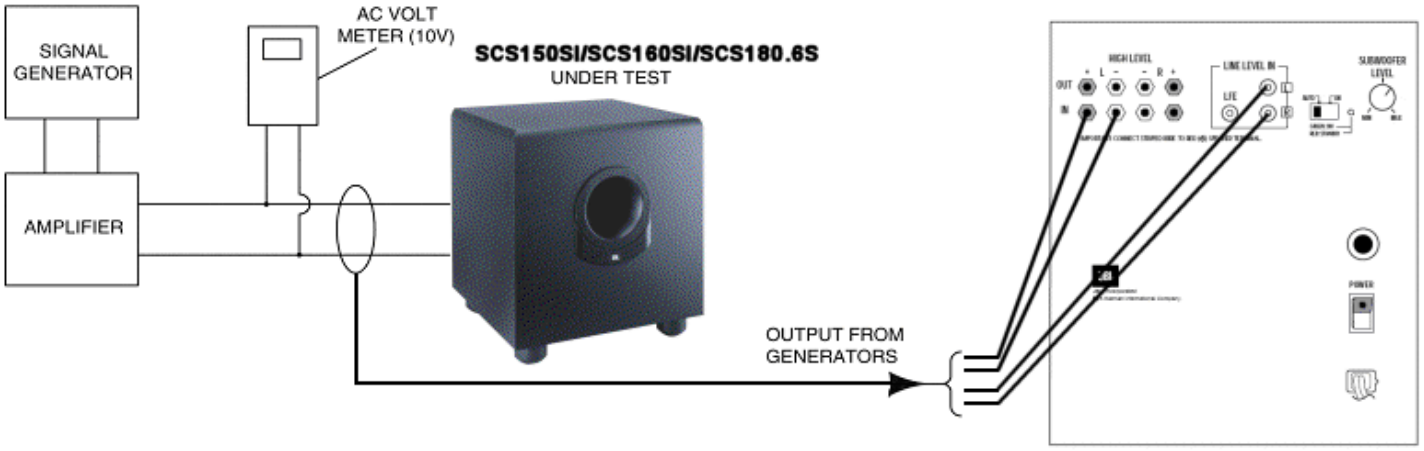
If there is low (or no) bass output:
• Make sure the connections to the left and right "Speaker Inputs" have the correct polarity (+ and –).
• Make sure the subwoofer is plugged into an active electrical outlet.
• Make sure the powered subwoofer is plugged in, and its Power switch ❶ is switched on to the "•" position.
• In Dolby Digital or DTS modes, make sure your receiver/processor is configured so that the subwoofer and LFE output are enabled.

SUB150/160/180 EXPLODED VIEW



Ref#	Description	Part Number	Qty
1	SUB150/160/180 CABINET	NOT FOR SALE	1
2	FOOT – MAIN PLASTIC BODY	(SCS150SI) WI5447	4
	“	(SCS160SI) 321-ABS-00008	4
	“	(SCS180.6) 321-ABS-00008-0LA	4
3	FOOT – RUBBER BOTTOM	(SCS150SI) WI5448	4
	“	(SCS160SI/180.6) 321-ABS-00009	4
4	FOOT SCREW T4*30L	06-T43005	4
5	10” WOOFER	25MF12DZB-DW02	1
6	AMPLIFIER/WOOFER SCREWS T4*20L	06-T4205012	15
7	SUB150/160/180 AMPLIFIER	NOT FOR SALE	1

Test Set Up and Procedure



Equipment needed:

- Function/signal generator/sweep generator
- Integrated Amplifier
- Multimeter
- Speaker cables

General Unit Function (UUT = Unit Under Test)

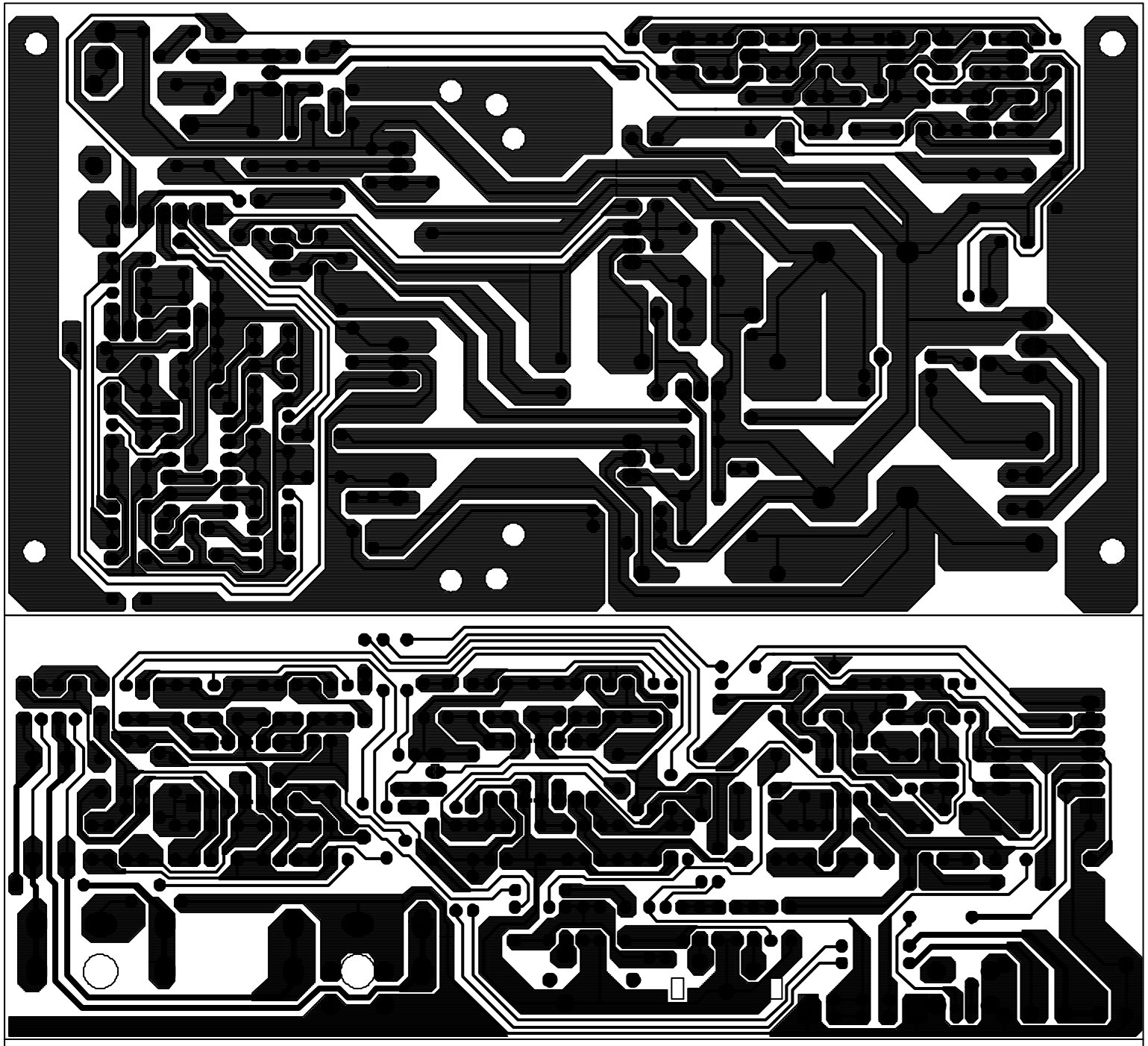
1) From the signal generator, connect one line level (RCA) cable to the Subwoofer Line Level Input jacks L/R on the UUT. Use a Y-cable from a mono source if necessary to connect to both inputs. Do not connect to the single LFE input.
2) Turn on generator; adjust to **100mV, 50 Hz**.
3) Plug in UUT; turn the power switch ON. LED should switch from Red to Green. Turn LEVEL control full clockwise (MAX)
4) LED should Green; immediate and vigorous bass response should be heard and felt from port tube opening.
5) Turn off generator, turn LEVEL control full counterclockwise (MIN), and disconnect RCA cable.
6) Connect one pair of speaker cables to Speaker Level input terminal (IN) on UUT. Cables should be connected to an integrated amplifier fed by the signal generator.
7) Turn on generator and adjust so that speaker level input at the amplifier is **2.0V, 50 Hz**. Turn LEVEL control full clockwise.
8) Green LED should light; immediate and vigorous bass response should be heard and felt from the port tube opening.

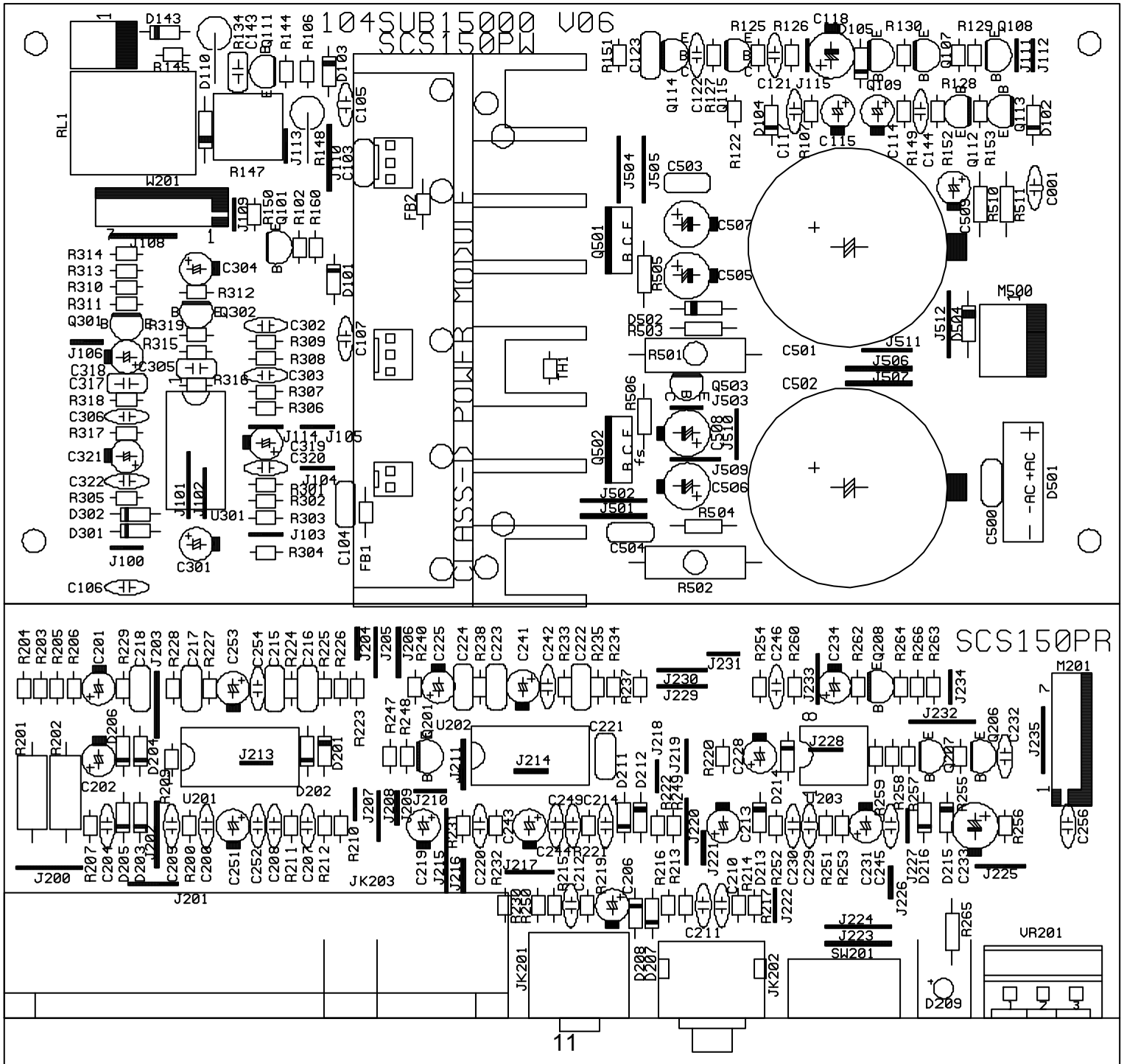
Sweep Function

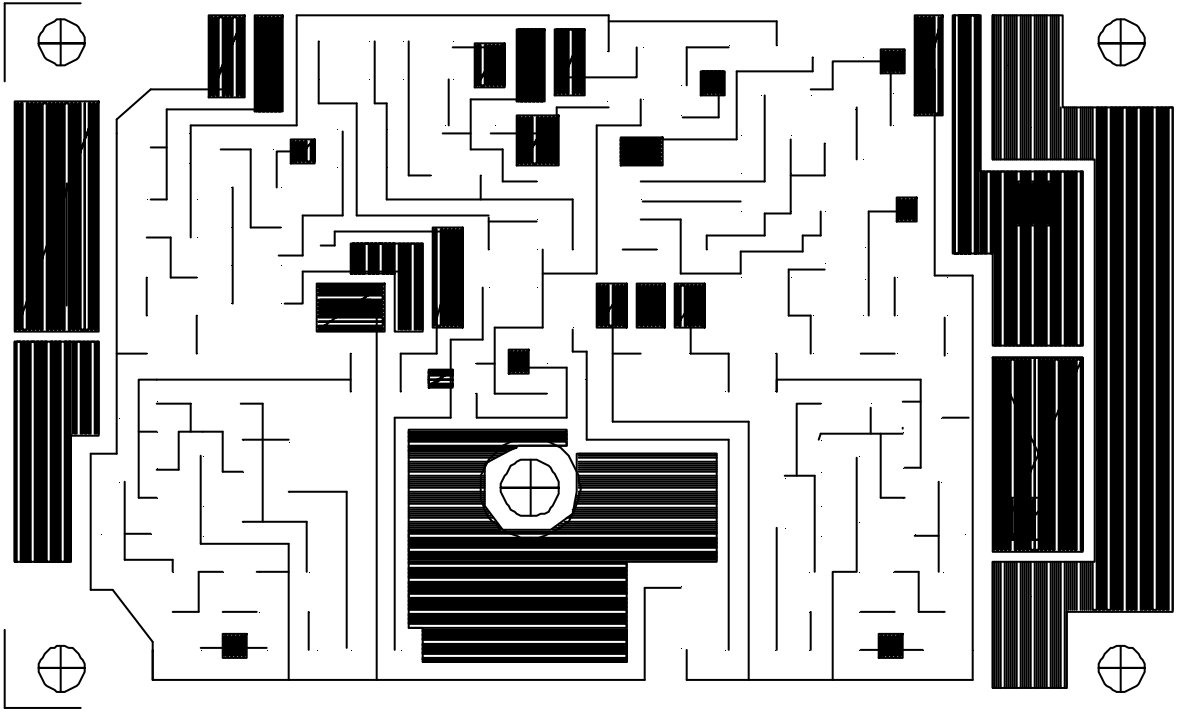
1) Follow steps 6-8 above, using a sweep generator as a signal source.
2) Sweep generator from 20Hz to 300Hz. Listen to the cabinet and drivers for any rattles, clicks, buzzes or any other noises. If any unusual noises are heard, remove woofers and test.

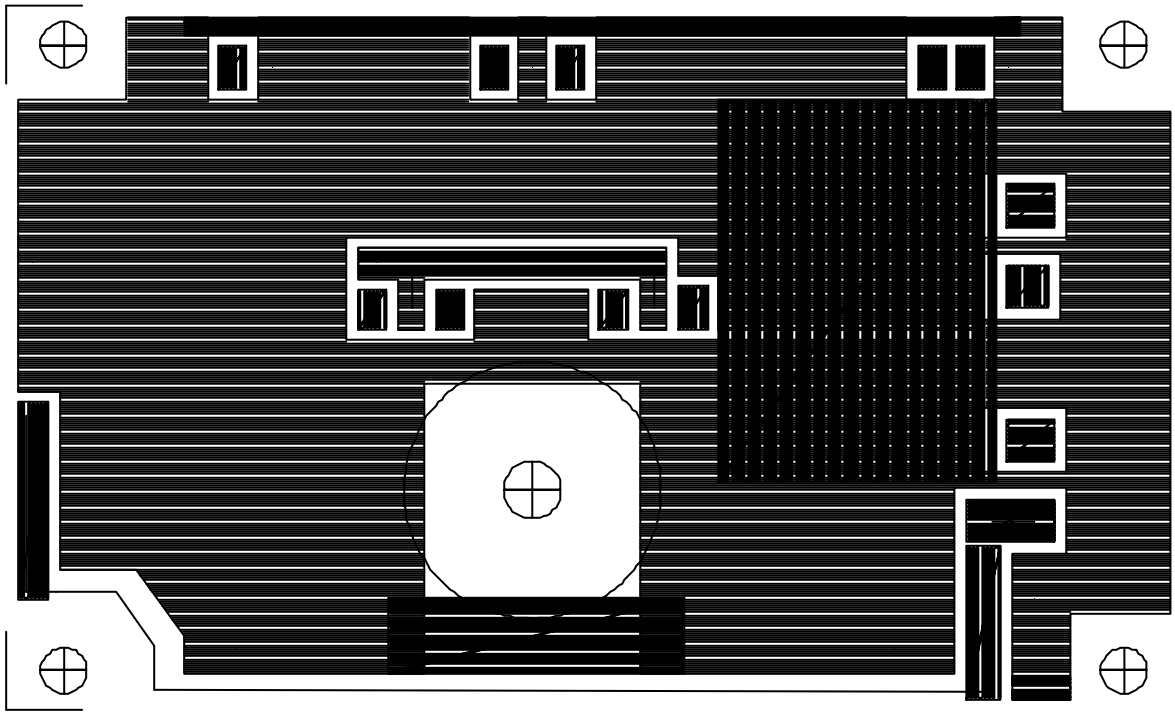
Driver Function

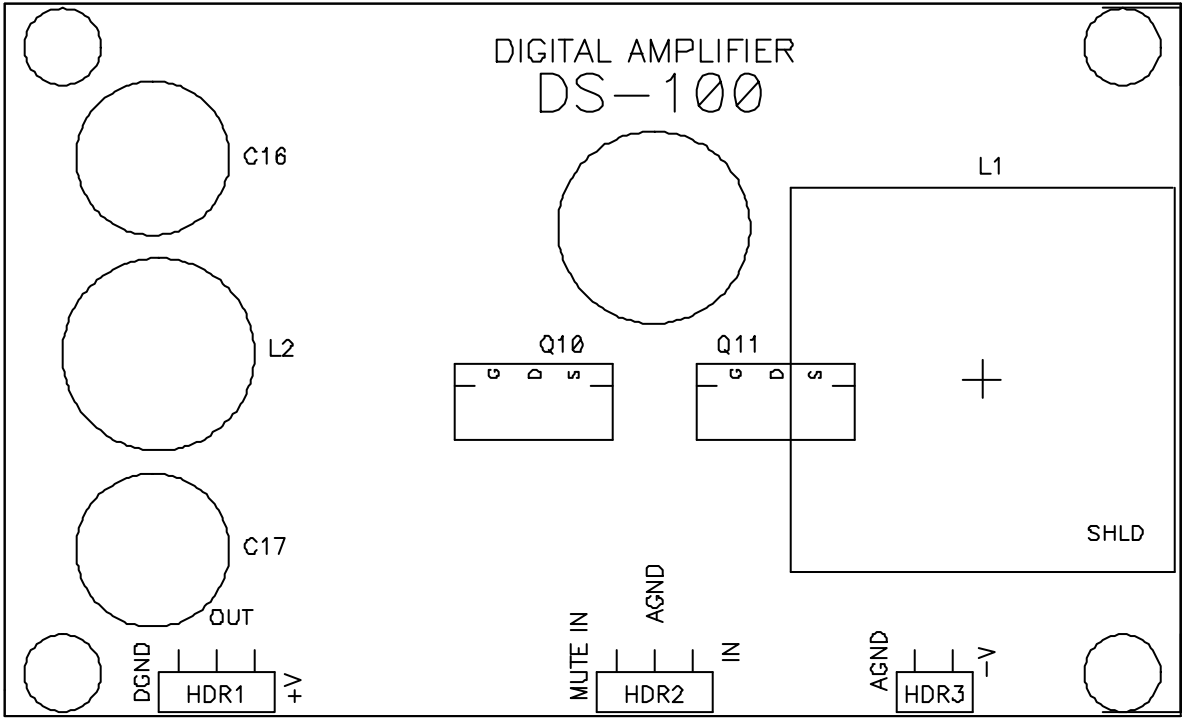
1) Remove woofer from cabinet (instructions on exploded view drawing); detach + and - wire clips.
2) Check DC resistance of woofer; it should be **3.4 ohms** ±10%
3) Connect a pair of speaker cables to driver terminals. Cables should be connected to an integrated amplifier fed by a signal generator. Turn on generator and adjust so that speaker level output is **5.0**V.
4) Sweep generator from 20Hz to 1kHz. Listen to driver for any rubbing, buzzing, or other unusual noises.

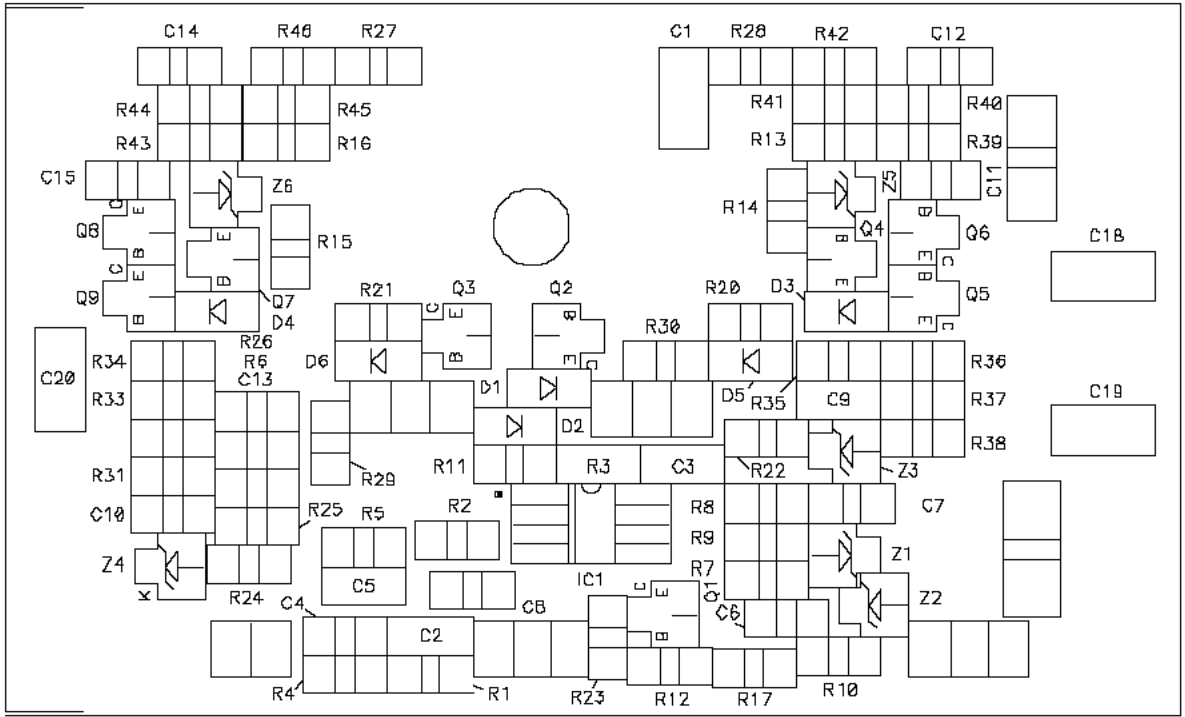



104SUB15000 V06
SCS150PW
CLASS-D POWER MODULE
SCS150PR






DIGITAL AMPLIFIER
DS-100
C16
L2
C17
OUT
L1
Q10
Q11
G
D
S
SHLD
DGND
HDR1
+V
MUTE IN
AGND
HDR2
IN
AGND
HDR3
-V


C14
R46
R27
C1
R28
R42
C12
R44
R45
R41
R40
R43
R16
R13
R39
C15
Z6
Z5
C11
R14
Q8
R15
Q4
Q6
C18
Q9
Q7
R21
Q3
Q2
R20
D3
Q5
D4
R30
R26
R6
D6
R36
C20
R34
C13
D1
D5
R35
C9
C19
R33
D2
R37
R31
R29
R11
R3
C3
R22
Z3
R38
C10
R25
R5
R2
R8
C7
R9
Z1
Z4
C5
IC1
R7
Q1
R24
C4
C8
C6
Z2
C2
R4
R1
RZ3
R12
R17
R10

Mechanical/Satellite Parts List

Description	SCS150SI	SCS160SI	SCS180.6S
SUBWOOFER			
Amplifier Ass'y	Not for Sale	Not for Sale	Not for Sale
SUB 150/SUB160/SUB180 Cabinet	Not for Sale	Not for Sale	Not for Sale
10" Woofer DCR = 3.4 ohms ±10%	25MF12DZB-DW02	25MF12DZB-DW02	25MF12DZB-DW02
Rubber Foot Pad	wi5448	321-ABS-00009	321-ABS-00009
Foot	wi5447	321-ABS-00008	321-ABS-00008-0LA
SATELLITES			
Complete	SCS150SI/SAT-1	SCS160SI/SAT-1	SCS180.6S SAT-1
Woofer	32PF55JE-LW02	32PF55JE-LW02	32PF55JE-LW02
Tweeter	29DM15NA-FT03	29DM15NA-FT03	29DM15NA-FT05 (Front baffle w/Tweeter)
Foot	wi5213-g	325-000-00151	320-RUB-00025-0LA (Rear) 320-RUB-00053-0LA (Front)
Grille	xc035006	244-030-00083	244-030-05043-0VA
X-over Network	xr5138-1	013-AA00-00296	013-AA00-00296
Enclosure		306-ABS-00124	
Front baffle		243-030-00323	
Wall bracket	wi0408	372-000-00042	372-000-00042
Support mural	wi0409	325-FE-00163	325-FE-00163
CENTER CHANNEL			
Complete	SCS150SI/CENTER-1	SCS160SI/CENTER-1	SCS180.6S CEN-1
Woofer	32PF55JE-LW02	32PF55JE-LW02	32PF55JE-LW02
Tweeter	29DM15NA-FT03	29DM15NA-FT03	29DM15NA-FT05
Foot	wi5213-g	325-000-00151	320-RUB-00053-0LA
Grille	xc035007	244-030-00084	244-030-05044-0VA
X-over Network	xr5138-1	013-AA00-00296	013-AA00-00296
Enclosure		306-ABS-00125	
Front baffle		243-030-00323	

OPTIONAL: Floor Stands for 150SAT & 160SAT satellites – FS400
Floor Stands for 180.6SAT satellites – FS1000

SUB150/SUB160/SUB180 Electrical parts List

Part#	Reference Designator	Description	Qty
Input/Power Amp PCB			
Semiconductors			
197131n4148	D102,103,104,105,143,201-208, 211,212,214,215,216,301,302	Diode 1N4148	20
19915000335	D213	Zener 3.3V 1/2W 52mm TAP	1
19915000625	D101	Zener 6.2V 1/2W 52mm TAP	1
19915001605	D502	Zener 16V 1/2W 52mm TAP	1
192027c1815gr	Q108,109,113,201,206-208,301,302	Trans NPN 60V .15A 2SC1815GR	9
192027c2235y	Q111	Trans NPN 120V 0.8A 2SC2235	1
192028a1015gr	Q101,107,112	Trans PNP 50V .15A 2SA1015GR	3
1921672n5551	Q114,115	Trans NPN 160V 0.6A 2N5551	2
1921682n5401	Q503	Trans PNP 150V 0.6A 2N5401	1
19006m4558d	U203	I.C. OPA 4558D Dual Op-Amp	1
19016tl074cn	U201,202,301	I.C TL074CN ST Quad Op-Amp	3
192161tip31c	Q501	Trans NPN 100V 3A TIP31C SGS	1
192162tip32c	Q502	Trans PNP 100V 3A TIP32C SGS	1
19510204hgw	D209	LED 204HGW	1
19700kbu606g	D501	Diode 4A 400V KBU606G	1
197101n4004	D110,504	Diode 1N4004	2
Resistors			
11014103j26	R503,504,510	RES, 10K 1/4W ±5% CF 26mm	3
11014222j26	R511	RES, 2.2K 1/4W ±5% CF	1
11014432j26	R506	RES, 4.3K 1/4W ±5% CF	1
11014472j26	R505	RES, 4.7K 1/4W ±5% CF	1
11016102j26	R153,213,214,215,254	RES, 1K 1/6W ±5% CF	5
11016103j26	R128,130,149,150,209,212,216,217, 220,221,222,225-230,232,235, 240,248,260,264,305,306,308,311, 314,319	RES, 10K 1/6W ±5% CF	29
11016104j26	R122,126,231,266,307	RES, 100K 1/6W ±5% CF	5
11016105j26	R259	RES, 1M 1/6W ±5% CF	1
11016122j26	R265	RES, 1.2K 1/6W ±5% CF	1
11016124j26	R233	RES, 120K 1/6W ±5% CF	1
11016151j26	R252	RES, 150 ohms 1/6W ±5% CF	1
11016153j26	R107,234	RES, 15K 1/6W ±5% CF	2
11016154j26	R252	RES, 150K 1/6W ±5% CF	1
11016182j26	R145	RES, 1.8K 1/6W ±5% CF	1
11016183j26	R262	RES, 18K 1/6W ±5% CF	1
11016203j26	R309	RES, 20K 1/6W ±5% CF	1
11016205j26	R257	RES, 2Meg ohm 1/6W ± CF	1

Part#	Reference Designator	Description	Qty
Input/Power Amp PCB			
11016221j26	R144	RES, 220 ohms 1/6W ±5% CF	1
11016222j26	R102	RES, 2.2K 1/6W ±5% CF	1
11016223j26	R238,247,255,256,263,316	RES, 22K 1/6W ±5% CF	6
11016273j26	R223,237	RES, 27K 1/6W ±5% CF	2
11016333j26	R310	RES, 33K 1/6W ±5% CF	1
11016393j26	R151	RES, 39K 1/6W ±5% CF	1
11016472j26	R200,207,258	RES, 4.7K 1/6W ±5% CF	3
11016473j26	R106,129,219,249,250,251	RES, 47K 1/6W ±5% CF	6
11016474j26	R127,312	RES, 470K 1/6W ±5% CF	2
11016512j26	R210,211	RES, 5.1K 1/6W ±5% CF	2
11016513j26	R224	RES, 51K 1/6W ±5% CF	1
11016562j26	R152	RES, 5.6K 1/6W ±5% CF	1
11016621j26	R160	RES, 620 ohms 1/6W ±5% CF	1
11016751j26	R315	RES, 750 ohms 1/6W ±5% CF	1
11016755j26	R313	RES, 7.5M 1/6W ±5% CF	1
11016913j26	R203-206	RES, 91K 1/6W ±5% CF	4
116161002f26	R301,303	RES, 10K 1/6W ±1% MF	2
116161102f26	R302	RES, 11.0K 1/6W ±1% MF	1
116162200f26	R317	RES, 220 ohms 1/6W ±1% MF	1
116162202f26	R318	RES, 22.0K 1/6W ±1% MF	1
11020332jk3	R134	RES, 3.3K 2W ±5% 7.5mm	1
11120102jk3	R148	RES,MF 1K 2W ±5% 7.5mm	1
11130471jk2	R501,502	RES,MF 470 ohms 3W ±5% 10mm	2
11350s68j00	R147	RES,CEW 0.068 ohms 5W	1
11012472j00	R201,202	RES, 4.7K 1/2W ±5%	2
115h503a102	VR201	POT Gain control (50K)	1
Capacitors			
132103kb00	C500	CAP, MY 0.01uF 200V ±10%	1
1385478m63	C501,502	CAP, E 4700u 63v 20% pitch 10mm	2
129a154j633	C221,222	CAP, F 0.15U 63V ±5% MSC TAP	2
1302b101k503	C302,303,306	CAP, CA 100P 50V ±10% TAP	3
1302b221k503	C200,204-208,210,211,212,214, 220,230,249	CAP, CA 220P 50V ±10% TAP	12
1302b470k503	C229	CAP, CA 47P 50V ±10% TAP	1
1302f104z503	C100,107,117,122,144,232,242,244, 245,246,252,254,256,320,322	CAP, CA 0.1U 50V +80/-20% TAP	15
132103j503	C223,224,305,317	CAP, MY 0.01U 50V ±5% TAP	4
132103ja03	C103,104	CAP, MY 0.01uf 100V ±5% TAP	2
132104ja03	C123,218,503,504	CAP, MY 0.1UF 100V ±5% TAP	4
132223ja03	C215	CAP, MY 0.022uF 100V ±5% TAP	1
132273ja03	C143	CAP, MY 0.027UF 100V ±5% TAP	1
132473ja03	C216,217	CAP, MY 0.047uF 100V ±5% TAP	2

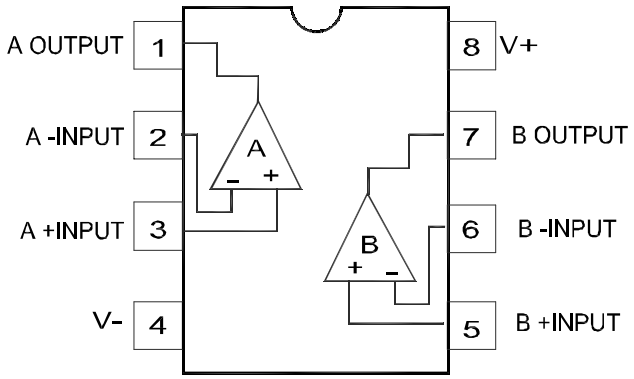
Part#	Reference Designator	Description	Qty
Input/Power Amp PCB			
1353105m50	C228	CAP, E 1U 50V ±20% TAP	1
1353106m50	C201,202,206,213,219,231,241,243, 251,253,319,321	CAP, E 10U 50V ±20% TAP	12
1353107m10	C114,115	CAP, E 100U 10V ±20% TAP	2
1353107m16	C234	CAP, E 100uF 16V ±20% TAP	1
1353107m35	C507,508	CAP, E 100U 35V ±20% TAP	2
1353225m50	C509	CAP, E 2.2U 50V ±20% TAP	1
1353226m16	C304	CAP, E 22U 16V ±20% TAP20% TAP	1
1353226m50	C225,505,506	CAP, E 22U 50V ±20% TAP	3
1353227m16	C118,233	CAP, E 220U 16V ±20% TAP	2
1353476m16	C318	CAP, E 47U 16V ±20% TAP	1
Power Amp Class D Module part# 012-7500-00022 RECOMMENDED: REPLACE ENTIRE MODULE			
Resistors			
11812061001j	R2,11,29,30	RES, 1.00K 1206 5%	4
11812061002j	R7,9,25	RES, 10.0K 1206 5%	3
118120610r0j	R22,23	RES, 10.0 ohms 1206 5%	2
11812061201j	R31-46	RES, 1.20K 1206 5%	16
11812062002j	R26	RES, 20.0K 1206 5%	1
11812062201j	R6,13,16	RES, 2.20K 1206 5%	3
11812062701j	R10	RES, 2.70K 1206 5%	1
11812063000j	R24	RES, 300.0 ohms 1206 5%	1
11812063301j	R14,15,27,28	RES, 3.30K 1206 5%	4
11812063902j	R3	RES, 39.0K 1206 5%	1
11812064700j	R8	RES, 470 ohms 1206 5%	1
11812064701j	R1,5,12	RES, 4.70K 1206 5%	3
11812064702j	R17	RES, 47.0K 1206 5%	1
11812064704j	R4	RES, 4.70M 1206 5%	1
118120647r0j	R20,21	RES, 47.0 ohms 1206 5%	2
Capacitors			
141c0101k50	C4	CAP,CA 100pF 50V 10% 1206 NP0	1
141c0220k50	C5	CAP,CA 22pF 50V 10% 1206 SMT NPO	1
141c0561k50	C6	CAP,CA 560pF 50V 10% 1206 NPO	1
141c6104m50	C2,3,7,8,9,10,11,15	CAP,CA 0.1uF 50V 20% 1206 Z5U	8
141c7223k50	C13	CAP,CA 0.022uF 50V 10% 1206 X7R	1
141d7104ka0	C1	CAP,NP 0.1uF 100V 10% 1210 X7	1
128e106ma01	C16,17	CAP,E NP 10uF 100V 20%	2
141d7104kb0		CAP,NP 0.1uF 200V 10% 1210 X7	1

Part#	Reference Designator	Description	Qty
Power Amp Class D Module part# 012-7500-00022 RECOMMENDED: REPLACE ENTIRE MODULE			
Semiconductors			
19016tl072dts	IC1	SMD I.C. TL072CDT SGS Dual Op-Amp	1
19209124126qs	Q1,4,5	TRANS, NPN 50V 0.15A 2SC2412K	3
19209139066rs	Q2,8	TRANS, NPN 120V 0.05A 2SC3906K	2
19209210376qs	Q7,9	TRANS, PNP 50V 0.15A 2SA1037K	2
19209215146rs	Q3,6	TRANS, PNP 120V 0.05A 2SA1514K	2
19703rls4148s	D1,2,3,4,5,6	Diode RLS4148	6
19915000563s	Z1,2	ZENER 5.6V 5% PHILIPS BZX84-C5 V6	2
19915001203s	Z5,6	ZENER 12V 5% PHILIPS BZX84-C12	2
19915001503s	Z3,4	ZENER 15V 5% PHILIPS BZX84-C15	2
192232irf9640	Q10	FET IRF9640 IR P-CH TO220	1
192233irf640	Q11	FET IRF640 IR N-CH TO-220	1
Miscellaneous			
1759f40hr2		Wafer 40PIN PITCH=2.54mm HR2*40	
12214121m4191	L1	Ferrite core LS-A6206-ST EFD-30	1
12214350j4180	L2	Inductor 35uH	1
06-t3085020	PCB TO H/S-2,PCB TO PCB/H-4	SCREW 3*8	6
06-t31207	TO HSQLC1004/ID150-1	SCREW M3*12	1
Misc./Mechanical			
25MF12DZB-DW02	10" Woofer		1
WI5447	Plastic foot		4
WI5448	Foot, rubber bottom		4
150r4055900	T501	Power Transformer 120V/60H	1
152u602015		POWER CORD SVT FT-2 6FT	1
154k31505t0	F501	Fuse 3.15A 250V 30mm UL/CSA	1
15563032i	For F501	Fuse holder HTB-32I 30mm UL/CSA	1
171urwh124d	RL1	RELAY, RWH-SH-124D(1600ohm)	1
180pbr12c11s	SW501	Power Switch BR12C11S	1
180tms7210v	SW201	SWITCH SLIDE 6PIN MS7210V	1
1091ttc802j0	TH1	NTC, TTC-802(JS) Thermistor	1
650pd30	TO 104sub15000	PCB HOLDER L TYPE t=1.6mm S.P.C.C	2
652m3t03	TO ID150□PCB(104qsub150d0)	SOLDER TERMINAL M3 t=0.3	1
653hsqlc1004		HEAT SINK	1
162a040d001	M10	2Pin spk Wires conn Asy	1
176wjce1		U/L TERMINAL CE-1	1
640rpsub150		AI REAR PANEL	1
700kb800		PLASTIC KNOB 46077-W SOFT P.V.C.	1
707ac800	REAR PANEL-1,REAR COVER-1	BUSHING 4K-4 NO-BB	2

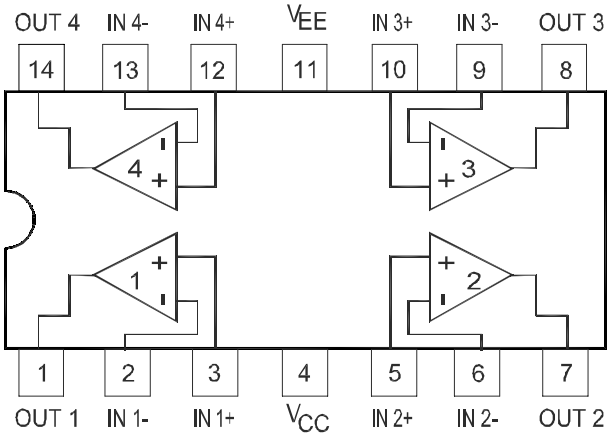
Part#	Reference Designator	Description	Qty
Misc./Mechanical			
723a125		EVA (Gasket) 213*15*2.0mm	2
723a125-1		EVA (Gasket) 213*15*1.0t	2
723b125		EVA (Gasket) 238*15*2.0mm	2
723b125-1		EVA (Gasket) 238*15*1.0t	2
723j125	TO SPK WIRE	EVA (Gasket) 225*15*1t UL	1
06-t30804	R/P TO H/S-2,R/P TO PCB-2	SCREW 3*8	4
06-t31004	SPK-2,RCA-2	SCREW M3*10mm	4
06-t41208	TO 700rc800a	SCREW 4*12	4
104ds15000		PCB 171mm*141mm FR4	
104sub15000		168*152mm 94V-0	1
16210060003	J104 TO W201 PIN4	WIRE 60mm BLACK	1
16210082007	SW TO FUSE HOLDER	WIRE RED 18AWG 80mm #1015	1
16250129001	W201	MULTI WIRES 120mm AWG28 WHT	1
1740rca108gb	JK201	PIN RCA JACK BROWNGOLD	1
1740rcb202vg	JK202	RCA JK RCB-202V D(G) GOLD PLATE A=WHIT	1
17420810360g	JK203	SPK JK BP 8PIN SH0810360G	1
1751c07v01	M201	Wafer 7PIN PITCH=2.5mm	1
1751d02v01	M100	Wafer 2PIN PITCH=3.96mm	1
1751d03v01	M500	Wafer 3PIN PITCH=3.96mm JST-VH	1
193201815t2	For Q10,11	CERAMIC ISOLATOR	2
1201000003	FB1,2	Ferrite BEA 10W AI YT-C3104-0051	2

Integrated Circuit Diagrams

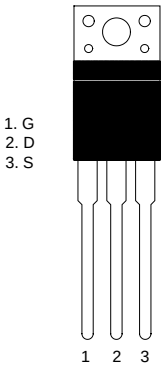
4558 / TLO72 DUAL OP AMP,
U203, IC1



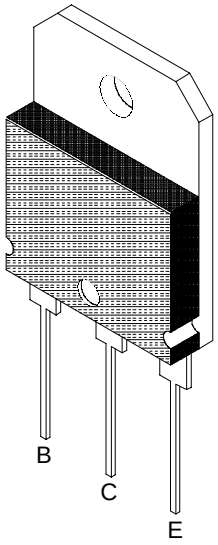
OPAMP, QUAD 14P DIL TL074
U201, 202, 301



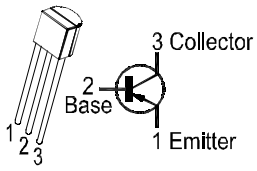
MOSFET, TO220
IRF640, 9640
Q11, 10



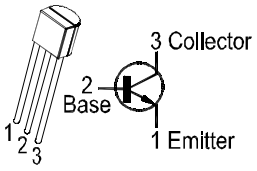
TIP31C NPN,
TIP32C PNP,
Q501,502



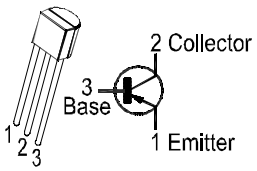
TRANS, PNP, 2N5401 TAP,
TO-92,
Q503



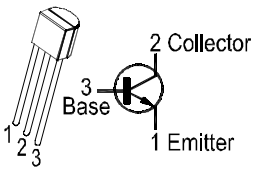
TRANS, NPN, 2N5551 TAP,
Q114,115

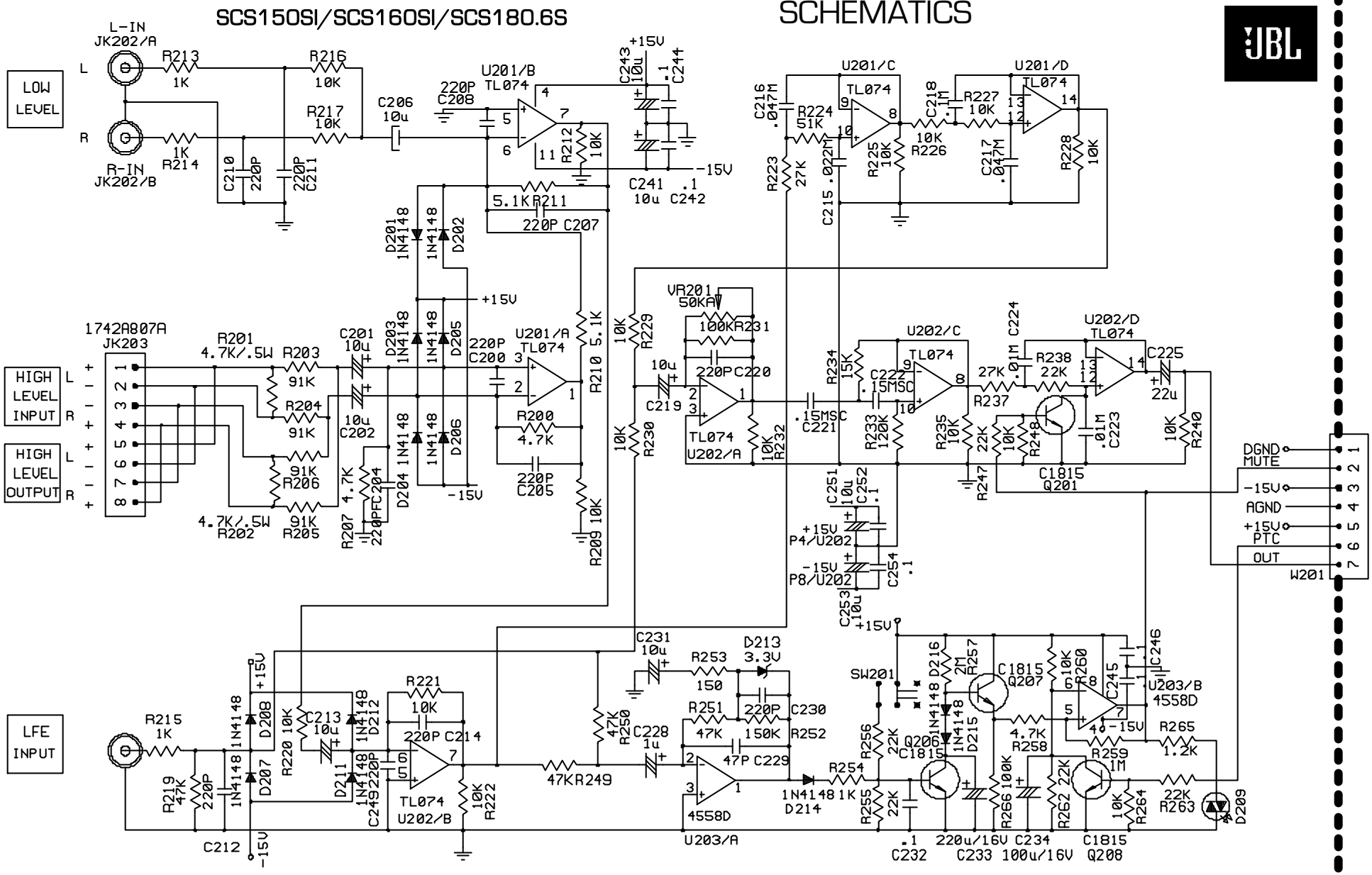


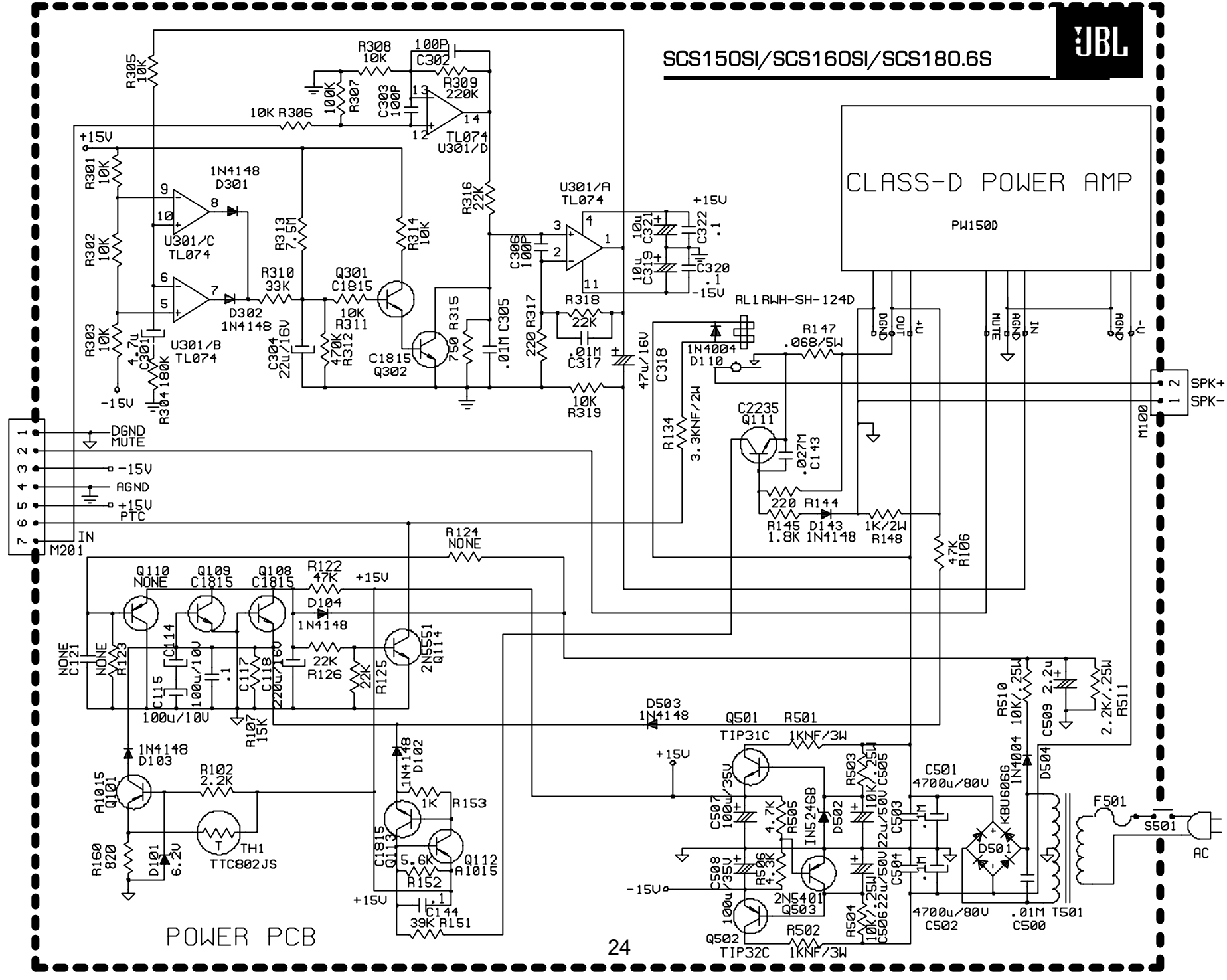
TRANS, PNP, TAP,
2SA1015GR, 2SC1037K,
2SA1514K
Q3,6,7,9,101,107,112

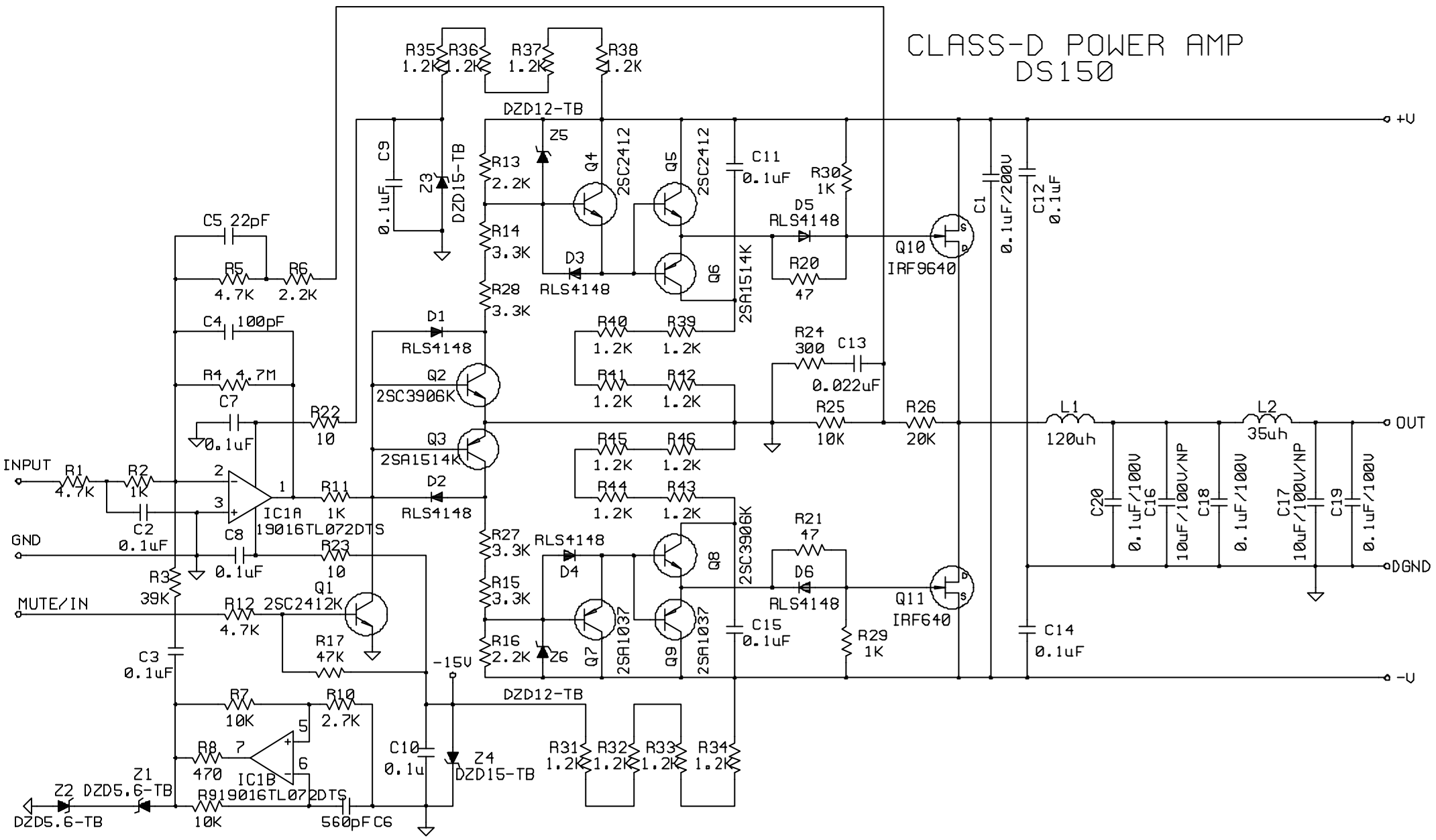


TRANS, NPN, 2SC1815GR TAP,
2SC2235, 2SC2412K, 2SC3906
Q1,2,4,5,8,11,108,109,113,201,206=208,301,302




LOW LEVEL
HIGH LEVEL INPUT
HIGH LEVEL OUTPUT
LFE INPUT
L-IN JK202/A
R-IN JK202/B
1742A807A JK203
U201/A TL074
U201/B TL074
U201/C TL074
U201/D TL074
U202/A TL074
U202/B TL074
U202/C TL074
U202/D TL074
U203/A 4558D
U203/B 4558D
VR201 50KA
Q201 C1815
Q207 C1815
Q206 C1815
Q208 C1815
D213 3.3V
D214 1N4148
SW201
DGND
MUTE
-15V
AGND
+15V
PTC
OUT
W201
JACK PANEL PCB


CLASS-D POWER AMP
PW150D
POWER PCB
R305 10K
R308 10K
100P C302
R309 220K
10K R306
100K R307
C303 100P
TL074 U301/D
+15V
R301 10K
1N4148 D301
U301/C TL074
R302 10K
R313 7.5M
R314 10K
R316 22K
U301/A TL074
C306 100P
10u C321
.1 C322
10u C319
C320 .1
-15V
R303 10K
4.7u C301
U301/B TL074
R304 180K
-15V
R310 33K
Q301 C1815
D302 1N4148
C304 22u/16V
470K R312
10K R311
C1815 Q302
750 R315
.01M C305
220 R317
R318 22K
.01M C317
47u/16V C318
10K R319
RL1 RWH-SH-124D
1N4004 D110
R147 .068/5W
R134 3.3KNF/2W
C2235 Q111
.027M C143
220 R144
R145 1.8K
D143 1N4148
1K/2W R148
47K R106
M100
SPK+
SPK-
DGND
MUTE
-15V
AGND
+15V PTC
IN M201
R124 NONE
Q110 NONE
Q109 C1815
Q108 C1815
R122 47K
+15V
D104 1N4148
NONE C121
NONE R123
C114
C115 100u/10V
100u/10V
.1
C117
C118 220u/16V
22K R126
22K R125
2N5551 Q114
R107 15K
D503 1N4148
Q501
R501
TIP31C
1KNF/3W
+15V
C507 100u/35V
R503 10K/.25W
C505
C501 4700u/80V
R510 10K/.25W
C509 2.2u
2.2K/.25W R511
D504 1N4004
KBU606G
F501
S501
AC
1N4148 D103
R102 2.2K
A1015 Q101
R160 820
D101 6.2V
TH1 TTC802JS
1N4148 D102
1K R153
C1815 Q113
5.6K R152
Q112 A1015
+15V
.1 C144
39K R151
R506 4.3K
D502 1N5246B
C503 .1M
C508 /35V
R505 4.7K
2N5401 Q503
C504 .1M
-15V
100u/35V
Q502 TIP32C
R502 1KNF/3W
R504 10K/.25W
C506 22u/50V
C502 4700u/80V
C500 .01M
T501


CLASS-D POWER AMP
DS150
+U
-U
OUT
DGND
INPUT
GND
MUTE/IN
DZD12-TB
DZD15-TB
DZD5.6-TB
-15V
IC1A 19016TL072DTS
IC1B 19016TL072DTS
2SC2412
2SA1514K
2SC3906K
2SA1037
RLS4148
IRF9640
IRF640
R1 4.7k
R2 1K
R3 39K
R4 4.7M
R5 4.7K
R6 2.2K
R7 10K
R8 470
R10 2.7K
R11 1K
R12 2SC2412K 4.7K
R13 2.2K
R14 3.3K
R15 3.3K
R16 2.2K
R17 47K
R20 47
R21 47
R22 10
R23 10
R24 300
R25 10K
R26 20K
R27 3.3K
R28 3.3K
R29 1K
R30 1K
R31 1.2K
R32 1.2K
R33 1.2K
R34 1.2K
R35 1.2K
R36 1.2K
R37 1.2K
R38 1.2K
R39 1.2K
R40 1.2K
R41 1.2K
R42 1.2K
R43 1.2K
R44 1.2K
R45 1.2K
R46 1.2K
R91 10K
C1 0.1uF/200V
C2 0.1uF
C3 0.1uF
C4 100pF
C5 22pF
C6 560pF
C7 0.1uF
C8 0.1uF
C9 0.1uF
C10 0.1u
C11 0.1uF
C12 0.1uF
C13 0.022uF
C14 0.1uF
C15 0.1uF
C16 10uF/100V/NP
C17 10uF/100V/NP
C18 0.1uF/100V
C19 0.1uF/100V
C20 0.1uF/100V
L1 120uh
L2 35uh
Z1 DZD5.6-TB
Z2 DZD5.6-TB
Z3 DZD15-TB
Z4 DZD15-TB
Z5
Z6
D1 RLS4148
D2 RLS4148
D3 RLS4148
D4 RLS4148
D5 RLS4148
D6 RLS4148
Q1 2SC2412K
Q2 2SC3906K
Q3 2SA1514K
Q4 2SC2412
Q5 2SC2412
Q6 2SA1514K
Q7 2SA1037
Q8 2SC3906K
Q9 2SA1037
Q10 IRF9640
Q11 IRF640

SCS150SI/SCS160SI/SCS180.6S

Packaging